

REMARKS

Claims 1-10, 13, 14-16, and 20-25 have been previously canceled, claim 11 is currently amended, and no new claims are added by way of this response. Thus, claims 11-12 and 17-19 are pending and presented for examination. Applicant respectfully requests reconsideration and allowance of the pending claims in view of the foregoing amendments and the following remarks.

Response To Claim Objections

The Examiner has objected to claim 11 for informalities. Applicant has corrected the informalities and respectfully requests that the Examiner withdraws the objections.

Response To Rejections Under Section 103

Claims 11, 12, 17 and 18 stand rejected under 35 U.S.C. § 103(a), the examiner contending that these claims are obvious over McComas et al. (US 4,705,203) in view of Marcin, Jr et al. (US 5,914,059).

Claim 19 stands rejected under 35 U.S.C. § 103(a), the examiner contending that this claim is obvious over McComas et al. (US 4,705,203) in view of Marcin, Jr et al. (US 5,914,059), and further in view of Philip (US 7,416,108).

Applicant has amended claim 11 to clearly define the invention. Claim 11 now recites:

“...wherein the solder comprises a first constituent with a melting temperature lower than a melting temperature of the component base material and a second constituent having a high durability and a melting temperature greater than the first constituent melting temperature but below the base material melting temperature so that both the first constituent and the second constituent in the solder are melted by the laser beam but the component base material is not melted, wherein a first solder composition in which the first constitute makes up a high proportion is applied first to establish a good bonding with the component base material, and a second solder composition in which the first constitute is reduced relative to the second constitute is subsequently applied to ensure a high durability during subsequent operation of the component and is not removed.” (Specification paragraphs 00021, 00040-00041, and figure 2).

Regarding claim 11, the Examiner contends that McComas teaches wherein the solder comprises a first constituent (reads on the layer 15 with high boron content, see figure 3 and column 3, lines 8-50) with a melting temperature lower than a melting temperature of the component base material and a second constituent having a high durability and a melting temperature greater than the first constituent melting temperature but below the base material melting temperature (reads on the layer 25, see figure 3 and column 4, lines 43-55). Applicant respectfully submits that McComas teaches the outer layer 25 does not melt (column 4 lines 45-48). In contrast, Applicant claims the solder comprises a first constituent with a melting temperature lower than a melting temperature of the component base material and a second constituent having a high durability and a melting temperature greater than the first constituent melting temperature but below the base material melting temperature. Applicant further claims the solder is melted by the laser beam wherein the component base material is not melted. Therefore, both the first constituent and the second constituent in the solder are melted by the laser beam but the component base material is not melted.

The Examiner further contends that McComas teaches wherein a first solder composition in which the first constituent makes up a high proportion is applied first, and a second solder composition in which the first constituent is reduced relative to the second constituent is subsequently applied (see, column 3, lines 8-40 and column 4, lines 28-55). In the Response to Argument section of the Office Action, the Examiner contends that McComas teaches an alternative embodiment in the first solder layer 15 contains a higher percentage of boron, and the second solder layer 25 contains some percentage of boron but lower than that of the first solder layer. Applicant respectfully agrees with the Examiner. However McComas teaches the outer layer is removed in the later steps of the process (column 4 lines 45-48). In contrast, Applicant claims wherein a first solder composition in which the first constituent makes up a high proportion is applied first to establish a good bonding with the component base material, and a second solder composition in which the first constituent is reduced relative to the second constituent is subsequently applied to ensure a high durability during subsequent operation of the component. Therefore, the second solder composition is not removed during subsequent operation of the component.

In view of the above, Applicant respectfully submits that independent claim 11 is patentable.

Dependent claims 12 and 17-19 are patentable based on their dependency from independent claim 11 as well as based on their own merit. Therefore, Applicant respectfully requests that the Examiner withdraws the Section 103 rejection.

Conclusion

For the foregoing reasons, it is respectfully submitted that rejections set forth in the outstanding Office Action are inapplicable to the present claims and specification. Accordingly, Applicant respectfully requests that the Examiner reconsider the rejections and timely pass the application to allowance. Please grant any extension of time required to enter this paper. The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, including the fees specified in 37 C.F.R. §§ 1.16 (c), 1.17(a)(1) and 1.20(d), or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

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By: 

Ye Ren
Registration No. 62,344
(407) 736-6844

Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
Iselin, New Jersey 08830